ABSTRACT OF THE DISCLOSURE

Methods and apparatuses are disclosed for managing memory write back. In some embodiments, the method may include examining current and future instructions operating on a stack that exists in memory, determining stack trend information from the instructions, and utilizing the trend information to reduce data traffic between various levels of the memory. As stacked data are written to a cache line in a first level of memory, if future instructions indicate that additional cache lines are required for subsequent write operations within the stack, then the cache line may be written back to a second level of memory. If however, the future instructions indicate that no additional cache lines are required for subsequent write operations within the stack, then the first level of memory may avoid writing back the cache line and also may keep it marked as dirty.